

EFFECTS OF DIFFERENT ROOT INDUCING AGENTS ON CUTTING PROPAGATION OF TEA (*Camellia sinensis*)

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Abstract

In commercial cultivations, vegetative propagation through rooting of cuttings is common, and IBA based rooting hormone is often used. However, due to the need for non-chemical alternatives in organic cultivations, organic rooting substances have become increasingly important. Hence considering this, an experiment was conducted to investigate the effectiveness of different root inducing agents on the propagation of tea cuttings. The nodal cuttings were pre-treated with six different root inducing agents including water (control), aloe vera gel, coconut water, honey charcoal mixture, potato juice and rooting hormone (0.3% IBA). Each treatment was replicated four times with 20 cuttings in each. The experimental units were arranged in a completely randomized design. Cuttings' survival percentage, rooting percentage, number of roots, root length, fresh and dry weight of the root were evaluated during three phases as 2nd, 4th and 6th week. The data were statistically analyzed using SAS statistical package and treatment means were compared using DMRT at a 5% significance level. The results revealed that there were significant differences between the treatments on cutting performances. The cuttings treated with rooting hormone showed the highest values in rooting percentage (55.8%), sprouting percentage (72.3%), during the 4th week and root length (2.1cm) and root dry weight (0.254g) during the 6th week. Moreover, coconut water and aloe vera gel showed not significantly higher values in most of the measured variables compared to the rooting hormone. Therefore, it can be concluded that coconut water and aloe vera gel can be considered as alternative rooting substances to the chemical-based rooting hormone for organic tea cultivations.

Keywords: Aloe vera gel, *Camellia sinensis*, IBA, Propagation